

WHAT IS CLAIMED IS:

1. A leak check device comprising:

an evaporated fuel purge system including a fuel tank, an adsorption filter which connects to the fuel tank through a connecting pipe and has a venting flow path, and a vent valve connected to an intake system of an engine through a valve flow path;

a pump which pressurizes or depressurizes the venting flow path to inspect state of leakage in the evaporated fuel purge system;

a motor unit which drives the pump for applying or reducing pressure;

an in-vehicle battery for the motor unit; and

a voltage control circuit which controls a battery voltage supplied from the in-vehicle battery to the motor unit to a predetermined voltage, the voltage control circuit being located in an air passage through which the air flows from or into the pump.

2. The leak check device for evaporated fuel purge system according to Claim 1, further comprising:

a reference channel placed in parallel with the venting flow path; and

a switchover valve for switching flow paths which is capable of connecting the reference channel to the pump in place of the venting flow path,

wherein pressure increased or reduced by the pump is

alternately applied to the reference channel and the venting flow path through the switchover valve.

3. The leak check device for evaporated fuel purge system according to Claim 2,

wherein the leakage is determined by measuring at least one of pressure characteristics, the power consumption, rotational speed and electric current of the motor unit when pressure is applied to the reference channel and to the venting flow path and comparing measurement results.

4. The leak check device for evaporated fuel purge system according to Claim 1,

wherein the voltage control circuit supplies the predetermined voltage of less than 84% of a nominal voltage of the battery.

5. The leak check device for evaporated fuel purge system according to Claim 1,

wherein the voltage control circuit supplies the predetermined voltage of less than 10V, when a nominal voltage of the battery is 12V.

6. The leak check device for evaporated fuel purge system according to Claim 1,

wherein the voltage control circuit supplies the predetermined voltage of less than 20V, when a nominal voltage

of the battery is 24V.

7. The leak check device for evaporated fuel purge system according to Claim 1,

wherein the voltage control circuit is placed between the battery and an input stage of the motor unit or between the battery and a circuit dedicated to motor driving for the motor unit.

8. The leak check device for evaporated fuel purge system according to Claim 1,

wherein the voltage control circuit comprises a Zener diode and a semiconductor device.

9. The leak check device for evaporated fuel purge system according to Claim 8,

wherein the Zener diode and the semiconductor device are implemented on a circuit board ,and at least a part of the circuit board is located in the air passage.

10. The leak check device for evaporated fuel purge system according to Claim 2,

wherein the pump, the motor unit, and the switchover valve for switching flow paths are integrally assembled into a module.

11. The leak check device for evaporated fuel purge system

according to Claim 10, further comprising;

a pressure sensor which is located at an upstream of the voltage control circuit in the air inlet passage or in the air outlet passage, the pressure sensor being assembled in the module.